AMENDMENTS TO THE SPECIFICATION:

Please replace the title with the following amended title:

FIELD EMISSION DEVICE WITH GATE HAVING CYLINDRICAL PART

Please replace the Abstract with the following amended Abstract:

~~Provided is a field emission device using carbon nanotubes.~~ The field emission device includes a substrate, a cathode, a gate insulating layer, an electron emitter, and a gate electrode. The cathode is formed on the substrate. The gate insulating layer is formed on the cathode and has a well exposing a portion of the cathode. The electron emitter is formed on the exposed portion of the cathode. The gate electrode is formed on the gate insulating layer and has a gate hole corresponding to the well. The gate electrode further includes a cylindrical electrode part that forms a focusing electric field from the gate hole toward a proceeding path of an electron beam. Accordingly, a focusing electric field can be formed around an electron beam emitted from the electron emitter so as to converge and focus the electron beam passing through the focusing electric field. As a result, color purity, brightness, and durability can be improved.

Please replace the paragraph beginning at page 3, line 13, with the following amended paragraph:

Accordingly, embodiments of the present invention ~~provides~~ provide an FED capable of effectively focusing an electron beam emitted from an electron emitter.

Please replace the paragraph beginning at page 3, line 15, with the following amended paragraph:

~~The~~ Embodiments of the present invention ~~provides~~ provide a FED having improved color purity and clearness due to effective focusing of an electron beam.

Please replace the paragraph beginning at page 5, line 10, with the following amended paragraph:

Hereinafter, an FED and a method of manufacturing the FED according to the present ~~invention~~ disclosure will be described in detail with reference to the attached drawings. The FED of the present ~~invention~~ disclosure will be described as having a single gate structure. However, the FED may have a double gate structure without departing from the scope of the present invention.

Please replace the paragraph beginning at page 5, line 23, with the following amended paragraph:

In the above structure, a characteristic part of the ~~present invention~~ exemplary embodiment is a Bellmouse type cylindrical electrode part 24b that forms a focusing electric field around an electron beam passed through the gate hole 24a of the gate electrode part 24. As shown in FIG. 3A, the cylindrical electrode part 24b preferably has a Bellmouse shape which gradually broadens in the direction of electron beam propagation. The cylindrical electrode part 24b forms an electric field that converges or focuses the electron beam emitted from the electron emitter, i.e., the micro tips. FIG. 5 is a view for explaining the principle of forming an electric field using the cylindrical electrode part 24b and focusing an electron beam by the electric field. As shown in FIG. 5, a positive electric lens L, much like an optical convex lens, is formed by the cylindrical electrode part 24b (electric lens forming part). The positive electric lens L serves as a focusing lens that focuses a passing electron beam toward the central beam axis using an electric field. The theory behind the positive electric lens L is general electrodynamics, and thus will not be further described.

Please replace the paragraph beginning at page 6, line 26, with the following amended paragraph:

As described above, an FED according to the present ~~invention~~ disclosure is characterized in that a cylindrical electrode part for forming a focusing electric field, preferably a Bellmouse type electrode part, is formed at a gate electrode. The Bellmouse type electrode part is most effective in a single gate type FED using CNTs as an electron emitter as shown in FIG. 3B. A double gate type FED can effectively focus an electron beam without a cylindrical or Bellmouse type electrode part. However, also in the double gate type FED, a cylindrical or Bellmouse type electrode part characterizing the ~~present invention~~ described embodiment can be formed at a second gate electrode. Thus, an electron beam can be further effectively focused.

Please replace the paragraph beginning at page 8, line 27, with the following amended paragraph:

FIGS. 7D and 8D each illustrate trajectories of electron beams emitted from the FEDs shown in FIGS. 7A and 8A. As can be seen in FIGS. 7D and 8D, a radius of an electron beam emitted from the FED of the present invention shown in FIG. 8A is narrower than that of an electron beam emitted from the conventional FED shown FIG. 7A. According to calculation, the simulations showed that in embodiments of the present invention, electron beams reaching a front substrate on which an anode and a fluorescent material are formed are focused with an approximately 10% smaller width than in the conventional FED. Also, in the conventional FED, the width

of a well of a gate insulating layer was limited to 30 microns due to the height of the gate insulating layer. However, in the FED according to the present invention, the width of a well of the first gate insulating layer 22′ of a gate insulating layer can be adjusted by adjusting an area of the gate insulating layer to be etched. Thus, the well can be minutely formed to a width of 30 microns or less.

Please replace the paragraph beginning at page 9, line 6, with the following amended paragraph:

As described above, according to the present ~~invention~~ disclosure, since electron beams can be effectively focused, an FED having high color purity and brightness can be manufactured. Since the FED according to the present invention can form electron beams having a desired width using a single gate electrode, the FED of the present invention does not ~~need~~ require a complicated double gate electrode. However, if the FED is desired to have higher color purity, brightness, and performance than existing double gate electrode type FEDs, a cylindrical electrode part, preferably a Bellmouse type electrode part, can be formed at a final gate electrode, i.e., a second gate electrode.